

REMARKS

A power-of-attorney in favor of the undersigned is in the process of being executed and will be filed shortly. Full consideration of this amendment and communication with the undersigned hereafter is respectfully requested.

In the action of 19 April 2004, the examiner rejected claims 1-32 as anticipated by Lumelsky (US Patent No. 6,246,672). Lumelsky discloses a system involving elements of wireless data transmission, interactivity between the provider of certain digitized information and the user of a wireless telecommunications device, and transmission of audio content. However, the form, function, and intent of the systems disclosed by Lumelsky and the invention as presently claimed are completely different.

The present invention of independent claims 1, 9, 17 and 25 provides a method and system for enabling selected functions to be performed by a wireless telephone handset in response to audio-band digital messages (query messages). In a typical application of the current invention (independent claims 1 and 17), these audio-band digital messages are transmitted with audio content within the audio channel of a broadcast medium (e.g. an AM broadcast radio signal or the audio channel of a broadcast television signal) and are received by a compatible conventional broadcast receiver (e.g. an AM radio receiver or a television receiver, respectively). The conventional receiver, in the course of its normal operation, converts the received audio-band digital messages to acoustic signals which emanate through its audio speakers, and which are detected by the microphone of a nearby wireless telephone handset. The wireless telephone handset is equipped to decode instructions and other information carried in the audio-band digital message and subsequently performs various functions, as set forth in various claims.

By contrast, the system disclosed by Lumelsky provides a means by which wireless telephone handset users can "order" and receive certain digitally-coded audio content to be delivered to their handsets. This system does not involve the use of audio-band digital query messages in the control of wireless handset functionality, nor does Lumelsky with the use of audio broadcast

channels or any other audio channel (except the user's voice) to transmit such controlling messages.

In consideration of the examiner's statements regarding claims 1, 9, 17, and 25 of the current invention, the applicants make the following observations.

The examiner states that Lumelsky discloses a method and a system for performing a wireless interactive transaction using a wireless telephone handset comprising various of the elements disclosed in claims 1, 9, 17, and 25 of the current invention. These include "forming a digitally coded query signal (col.10, lines 21-33, it is inherent as evidenced by the fact that one of ordinary skill in the art would have recognized that the voice, which is introduced as electrical variations into the microphone, is sampled, and each sample is then converted into a digitally [sic] code);"

The cited text from Lumelsky (col. 10, lines 21-33 and referenced illustration in FIG. 1) describes a means by which a narrator's voice and text being read by a narrator are converted into two data streams. (This "text" is described as possibly being a textual representation of information or news.) The reference also makes note of prior art coding algorithms by which text can (as an alternative to being read by a narrator) be converted to a digital data stream so as to synthetically represent audio signals (i.e. human voice). In fact, neither of the two data streams described in Lumelsky represents a digitally coded query signal as specified in the claims. Both a digital representation of a narrator's voice and a digital representation of an audio reading of text (by actual reading or by using speech-to-text technology) are digital representations of audio signals, of indeterminate length, which are intended to be reproduced as such for purposes of being listened to by a human.

In contrast (as clearly illustrated in FIG. 1A and FIG. 1B of the present application) the digitally coded query signal of the current invention is a digital signal of predetermined length and format representing specific digital values associated with specific data fields. Note that claims 9 and 25 include the limitation of predetermined length and format of the query signal. The digitally coded query signal of the current invention has no audio antecedents. It is therefore the position of the applicants that the digital encoding of speech and synthesized speech as

described in the cited text from Lumelsky does not teach the formation or use of a digitally coded query signal as specified in the current invention. Note in claims 1 and 17 the specific limitation that the digital query signal is separate from audio-band content which is to be broadcast.

The examiner further states that the system disclosed by Lumelsky includes the steps "receiving said audio-band modulated query signal (col. 12, lines 17-25, the user terminal receives files via antenna (311))" and "conveying said audio-band modulated query signal to said wireless telephone handset (col. 11, lines 60-65, the PRSS transmits the information signal to the user's terminal);".

In the cited text and referenced figures, Lumelsky describes a system wherein digital data streams ("CES files") are transmitted as radio signals to a wireless user terminal (i.e. a wireless telephone handset). (Said user terminal may incidentally also contain a conventional broadcast radio receiver, but its function is incidental to the system disclosed in the cited text.) The transmitted radio signals are specifically of a frequency and format conforming to wireless data transmissions, and are specifically not conventional audio content broadcast radio signals. The antenna (311) that detects the wireless data transmissions in Lumelsky is part of the user's terminal, as clearly shown in FIG. 1, and therefore does not convey those transmissions to the user's terminal.

In contrast, in the current invention as set forth in claims 1 and 17, the transmitted combined audio-band signal, which includes the query signal, is received by a device separate from the wireless telephone handset and is conveyed as an audio frequency signal to the wireless telephone handset. The system described by Lumelsky is thus completely different, and does not teach or suggest the "receiving said combined audio-band query signal" and "conveying said combined audio-band query signal to said wireless telephone handset" steps of the present invention (independent claims 1 and 17).

The examiner further states that the system disclosed by Lumelsky includes the step of "controlling said wireless telephone handset to respond to said decoded instructions (col. 11, lines 48-65, the terminal provides means for inputting commands through pressing appropriate control keys on the user terminal)."

In the cited text, Lumelsky describes a means by which the user can control certain functions by manually pressing appropriate control keys on the user terminal. In contrast, in the

current invention, the step of "controlling said wireless telephone handset to respond to said decoded instructions" is a process for responding to decoded instructions from the original query message. Lumelsky does not teach responding to such decoded instructions.

It is therefore applicant's position that Lumelsky does not teach or suggest any of the subject matter of claims 1, 9, 17, or 25, as amended.

With respect to claims 2, 10, 18, and 26, the examiner states that "Lumelsky discloses the method and a system for performing a wireless interactive transaction, wherein said decoded instructions include a response telephone number and said step of controlling controls said wireless telephone handset to initiate a telephone call to said response telephone number (col. 5, lines 51-56; col. 6, lines 32-56; col. 11, lines 50-60, it is inherent as evidenced by the fact that one of ordinary skill in the art would have recognized that the user terminal is provided with means to call back to communicate with content providers)."

Lumelsky does not disclose providing a specific telephone number (the "response telephone number") to the handset within the decoded instructions as specified in claims 2, 10, 18, and 26 of the current invention. The teaching in Lumelsky of a user simply entering a known telephone number into a wireless handset and executing a call to that number (as in well-known conventional operation) does not teach or suggest the claimed subject matter.

With respect to claims 3, 11, 19, and 27, the examiner states that "Lumelsky discloses the method and system for performing a wireless interactive transaction according to claim 1, wherein said step of controlling controls said wireless telephone handset to respond to said decoded instructions after a predetermined action by a user (col. 11, lines 48-60, the user commands may be either by voice or by the use of command keys situated on the terminal, which, in turn, effects the processor of the user terminal to log on a request)."

Claims 3, 11, 19, and 27 of the current invention set forth a more specific arrangement of the method/system of claims 1, 9, 17, and 25, respectively, the handset being controlled (by the decoded instructions) to be responsive to a predetermined user action (e.g. pressing a particular key). Lumelsky discloses means by which a user action might control a wireless handset, but does not teach or suggest that the response to such a user action might be conditional upon instructions received in the form of a decoded instruction. Therefore, it is the position of the applicants that

Lumelsky does not teach or suggest the subject matter at claims 3, 11, 19, and 27.

With respect to claims 4, 12, 20 and 28, the examiner states that "Lumelsky discloses the method and system for performing a wireless interactive transaction, wherein said decoded instructions include user instructions, and said step of controlling controls said wireless telephone handset to display said user instructions and to respond to said decoded instructions when said user responds to said displayed user instructions (col. 11, lines 11-37, the user has the option of browsing during information reception, which, indeed, would provide authority to act on his or her response)."

Claims 4, 12, 20, and 28 set forth a more specific arrangement of the method/system of claims 3, 11, 19, and 27, respectively, the arrangement being that the handset is controlled (by the decoded instructions) to display user instructions. Lumelsky may be interpreted by one of ordinary skill in the art to include discussion of use of a wireless handset display to provide user instruction (in this case, instructions on browsing). However Lumelsky does not teach that a wireless handset may be controlled to display user instructions through the use of an audio-band query signal as specified in claims 1, 9, 17, or 25, on which claims 4, 12, 20, and 28, respectively, depend).

Instead, in the cited text Lumelsky teaches that "methods of searching and browsing via the PRSS may be implemented by schemes similar to the conventional methods of searching and browsing the Internet." One of ordinary skill in the art will understand this statement to mean that user instructions to be displayed on a wireless telephone handset may be provided using conventional methods of searching and browsing the Internet, and will further understand that, for a wireless telephone handset, such conventional means will be through the use of standard wireless data services, not through the use of an audio-band query signal. Lumelsky thus actually teaches away from the subject matter of claims 4, 12, 20, and 28.

With respect to claims 5, 13, 21 and 29, the examiner states that "Lumelsky discloses the method and system for performing a wireless interactive transaction, wherein an alerting signal is produced when said audio-band modulated query signal is conveyed to said wireless telephone handset (col. 11, line 38-47, it is inherent as evidenced by the fact that one of ordinary skill in the art would

have recognized that the user terminal may be equipped with notifying means)."

The applicants agree with the examiner that one of ordinary skill in the art would have recognized that a user terminal may be equipped with a notifying means. However, the wireless telephone handset set forth in the claims have such notifying means and it controls those means to provide an actual notification to the user upon the occurrence of a specific event. Lumelsky does not teach the use and control of the handset's alerting means to provide an alerting signal upon the conveyance of an audio-band query signal.

With respect to claims 6, 14, 22, and 30, the examiner states that "Lumelsky discloses the method and system for performing a wireless interactive transaction, wherein said decoded instructions include instructions to send a pre-determined digital message to a particular destination and said step of controlling controls said wireless telephone handset to send said digital message (col. 6, lines 1-4; col. 9, lines 6-13; col. 11, lines 25-30; col. 21, lines 38-46, the user has the means to send written messages or request information through text)."

As the examiner states, Lumelsky discusses the fact that the user has the means to send written messages or request information through text. However, this is not what is set forth in claims 6, 14, 22, and 30. What is set forth is instead the use of coded instructions carried in an audio-band query signal (as opposed to an action by the user) to cause a wireless telephone handset to send a pre-determined (as opposed to user-determined) digital message to a particular destination. Lumelsky does not teach or suggest the possibility of exerting such external control over a wireless telephone handset's digital message transmission capability in the manner set forth in claims 6, 14, 22, and 30.

With respect to claims 7, 15, 23 and 31, the examiner states that "Lumelsky discloses the method and system for performing a wireless interactive transaction, wherein said conveying of said audio-band modulated query signal to said wireless telephone handset is comprised of the steps of: producing an acoustic query signal from said received audio-band modulated query signal; and detecting, and converting to an audio-band signal, said acoustic query signal by said wireless telephone handset (col. 12, lines 10-45; Fig. 4, refs, 317, 327, 328, 329, the handset provides means to convert analog signals onto [sic] digital signals)."

Lumelsky does discuss the use of certain speech recognition technologies to allow the user to control certain functions by speaking certain voice commands into the microphone of a wireless telephone handset. Although acoustic signals are involved in both, this is nevertheless completely different from that set forth in claims 7, 15, 23, and 31. In the latter, the conveying of a received (by means other than the wireless telephone handset) audio-band signal to a wireless telephone handset (as set forth in claims 1, 9, 17, and 25 of the current invention) is accomplished by producing an acoustic signal (by the receiving means) from the received audio-band query signal, detecting the acoustic signal by the wireless telephone handset and converting it to an audio band signal (which detection and conversion, by definition, will require use of a microphone or equivalent device).

The examiner appears to suggest that the conventional use of a wireless telephone handset microphone to convert acoustic speech to an audio signal, as discussed in the cited text in Lumelsky, is equivalent to the use of such a microphone to convert an acoustic representation of an audio-band digital signal to a corresponding electronic audio-band digital signal. In applicant's view, there is no such equivalency. Lumelsky does not teach the additional element of claims 7, 15, 23, and 31 of the current invention, namely the step of producing an acoustic query signal from the received combined audio-band signal.

Accordingly, claims 1-32 are patentable over Lumelsky.

In addition to Lumelsky, the examiner has identified (and made of record) three other examples of prior art which the examiner considers to be pertinent to the current invention. These are the following patents, specifically:

US Patent No. 6,704,864 to Philyaw.

US Patent No. 5,303,393 to Noreen et al.

US Patent No. 5,585,858 to Harper et al.

Philyaw discloses the use of a "coded audio signal", transmitted over a broadcast audio channel and used to control certain functions of a "piece of configurable equipment." Philyaw teaches that the "piece of configurable equipment" is intended to be a computing device such as a personal computer and that the controlled functions include conducting of certain transactions over the Internet (to which the personal computer is connected). Philyaw does not teach the use of a coded audio signal to control the

functions or operation of a wireless telephone handset (operating in a wireless telephone network) as set forth in the present claims.

Noreen et al. discloses a satellite-based communications and broadcast system that is completely different in virtually all respects from the system disclosed in the current invention.

The system disclosed by Harper et al. in at least one application provides interactive functionality to a broadcast medium. The claimed invention includes an audio-band query signal embedded within the audio channel of a broadcast channel (which can be either radio or television). Harper et al. discloses the use of interactive elements embedded within the video channel of a broadcast television channel. Furthermore, Harper et al. does not disclose the use of a wireless telephone handset as a means for providing responses to the interactive elements.

In view of the above, the application is now in condition for allowance, and such action on the part of the examiner is respectfully requested.

This is also to request a three-month extension of time. Enclosed is the required fee of \$490. The Commissioner is authorized to charge any fees or deficiencies or credits to Deposit Account 07-1900.

Respectfully submitted,

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